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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,085

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Hiroto Tamaki

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EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,085	<b>Applicant(s)</b> TAMAKI ET AL.	
	<b>Examiner</b> C. Melissa Koslow	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-31 is/are allowed.
- 6) ☒ Claim(s) 1-9, 14-25 and 32 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

This action is in response to applicants' amendment of 29 May 2008. The amendments to the claims have overcome the objections to the claims and the specification and the 35 USC 112 second paragraph rejections. The amendment to the specification has overcome the drawings objections to figures 1 and 30. The certified translations have overcome the art rejections over WO 2004/030109. Applicant's arguments with respect to the remaining rejections have been fully considered but they are not persuasive.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because there are no Replacement Sheets for Annotated Sheets 2/71 and 26/71. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

In addition to each Annotated Sheet including annotations indicating the changes made to the previous version, applicants are required to submit Replacement Sheets containing the corrected drawing figure(s). See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing will result in the abandonment of the application.

Claims 21-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Pages 13-14 of the specification teaches the molar ratio of Sr to Ca or Ba is 6:4 to 9:1 and the molar ratio of Ca to Ba is 6:4 to 9:1. This ratio range is different from that in claims 21-23. This discrepancy between the claimed molar ratios and that disclosed in the specification need to be clarified.

Applicants argue that the claims are fully supported by the present application. This is incorrect since the ranges taught on pages 13 and 14, which are the only teachings of the molar ratios of Sr and Ca; Sr and Ba and Ca and Ba, are different from those claimed. Applicants have not pointed out where in the specification the claimed ranges are found and thus fully supports the claimed ranges. While applicants are correct that the claimed are part of the disclosure, support for the claimed subject matter must also be found in the specification. In this case, there is a discrepancy between the claimed ranges and the taught ranges which needs to be corrected. It is noted that the ranges in the originally filed claims 21-23 match the teachings on pages 13 and 14 of the specification. The rejection is maintained.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5, 6, 9, 14, 16, 18, 20, 24, 25 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,717,353.

This reference teaches an oxynitride phosphor having the formula  $(\text{Sr}_{1-a-b-c}\text{Ca}_b\text{Ba}_c)\text{Si}_x\text{N}_y\text{O}_z:\text{Eu}_a$ , where a is 0.002-0.2, b is 0-0.25, c is 0-0.25, x is 1.5-2.5, y is 1.5-2.5 and z is 1.5-2.5. This is the same formula as claim 6 and thus the phosphor must have a rhombic lattice system, a weight ratio of nitrogen to oxygen that falls within that claimed and the luminescent properties of claims 16 and 18, absent any showing to the contrary. Figure 1 should that the

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phosphor is excited by light having a wavelength of 490 or less. The amount of europium falls within that of claim 25 and thus it must have the property of claim 24. While the taught phosphor is produced by different process than that claimed, the resulting phosphors appear to be identical. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The reference teaches that the oxynitride phosphor emits green light. The reference teaches the claimed phosphor.

Claims 4, 7, 8, 15, 17, 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,717,353.

As stated above, this reference teaches an oxynitride phosphor having the formula  $(\text{Sr}_{1-a-b-c}\text{Ca}_b\text{Ba}_c)\text{Si}_x\text{N}_y\text{O}_z:\text{Eu}_a$ , where a is 0.002-0.2, b is 0-0.25, c is 0-0.25, x is 1.5-2.5, y is 1.5-2.5 and z is 1.5-2.5. The amount of europium overlaps that claimed. The taught ranges of x, y and z encompass and overlaps those claimed. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The taught ratios of Sr to Ca, Sr to Ca and Ca to Ba overlap those claimed. When c is greater than 0, the reference suggests a Ba containing oxynitride and the resulting phosphor would be expected to have the luminescent properties of claims 15, 17 and 19, absent any showing to the contrary. In addition, when c is

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greater than 0, the reference suggests the claimed device which would have a spectra that has peaks in the claimed ranges and a Ra that falls within the claimed range. The reference suggests the claimed phosphor.

Applicants argue the amendment to the claims overcome the rejections. The amendments to the claims do not overcome the above rejections, since they do not exclude the taught phosphors. The declaration filed on 29 May 2008 under 37 CFR 1.131 has been considered but is ineffective to overcome the reference since it was not signed by any of the parties who may make a declaration or affidavit under 37 CFR 1.131. See MPEP 715.04(I). The rejections are maintained.

Claims 26-31 are allowable over the cited art of record for the reasons given in the previous rejection.

Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion of the cited prior art of a phosphor having the claimed formula.

U.S. patent 7,351,356 is cited as of interest since it teaches, in claims 1-3 and 14-16, oxynitride phosphors whose formulas fall within and overlap those of claims 1-11, 13-25 and 32. U.S. patent 7,351,356 is the U.S. patent resulting from the U.S. national stage application for WO 2004/030109.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/  
July 18, 2008

/C. Melissa Koslow/  
Primary Examiner  
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